DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-021509
Date Inspected: 03-Mar-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Job Site

CWI Name: Fred Von Hoff

Inspected CWI report:	☑ Yes	☐ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☐ No	☑ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Tower Grillage

Summary of Items Observed:

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above. This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager was on site between the times noted above.

This QA Inspector was informed by QC Inspector Fred Von Hoff the Partial Joint Penetration (PJP) welds along the perimeter of the outer skin plates and internal grillage plates on the South Tower leg had been completed and that ABF welding personnel would be moving to start welding on the East Tower leg.

This QA Inspector performed a random visual verification of the PJP welds of the South Tower and observed that grinding and/cleaning of the welds had not been performed. This QA Inspector confirmed with QC Inspector Fred Von Hoff that a visual inspection had not been performed and accepted as of this time and date.
This QA Inspector observed ABF welding personnel setting up the electric resistance heating equipment on the East Tower leg. Later this date this QA Inspector observed ABF welding personnel Rick Clayborne (#2733), Richard Garcia (#5892) and Gilbert Peralta (#9453) performing Shielded Metal Arc Welding (SMAW) on the Complete Joint Penetration (CJP), Partial Joint Penetration (PJP) and Fillet welds. This QA Inspector observed the electronic readings of the preheating equipment indicated the temperatures were greater than the minimum preheat of 350°F. This QA Inspector used a temperature indicating marker to verify preheat temperatures at various locations inside the tower leg adjacent to where welding was being performed.

This QA Inspector observed ABF welding personnel Salvador Sandoval (# 2202) was performing SMAW on the

various CJP welds in the South Tower leg. This QA Inspector observed no further work on the full length cracks at weld joints TGS P1-P2 and TGS P1-P5 had been performed at this time. This QA Inspector observed the tack weld at TGS P2-F had cracked and due to what appears to be lack of support on two sides of plate P2 a 6-7 mm gap was present at this weld joint. Later this date QCM Jim Bowers informed this QA Inspector that ABF welding personnel were using hydraulic jacks to re-position plate P2 and that a continuous tack weld would be placed in weld joint TGS P1-P2 in order "hold" plate P2 in alignment. QCM Jim Bowers stated he was aware Engineer approval had not been obtained for the crack and that the entire tack weld would be removed when the repair process was started. This QA Inspector informed Lead QA Inspector Bill Levell of the proposed welding to be performed.

This QA Inspector was informed by QC Inspector Fred Von Hoff the welding parameters were within the required heat input range in the Welding Procedure Specifications (WPS) ABF-WPS-D15-1162-4 for the PJP welds, ABF-WPS-D15-1042A-4 for CJP welds and ABF-WPS-D15-F1206 for Fillet welds. Note the welding parameters are the same for all three procedures. This QA Inspector randomly observed the amperages and voltages of ABF welding personnel Rick Clayborne (#2733), Richard Garcia (#5892), Gilbert Peralta (#9453) and Salvador Sandoval (# 2202) were within the ranges in the WPS. This QA Inspector observed that both 3.2 mm and 4.0 mm diameter E9018H4R electrodes were being used and stored in separate heated storage containers. This QA Inspector also observed the 1-hour exposure limit for the electrodes appeared to be monitored and adhered to.

This QA Inspector observed that plate P8 on the South Tower leg appeared to extend approximately 10 mm further onto the intersecting plate than plate P9. This was brought to the attention of QC Inspector Fred Von Hoff and QCM Jim Bowers, both informed this QA Inspector there was ample room of approximately 29 mm to place the required 23 mm fillet weld. This QA Inspector had a conversation with Caltrans Construction Engineer Doug Wright regarding this issue and was informed that the slight offset would not cause an issue later in the erecting process.

This QA Inspector had previously received Weekly Welding Report submittal; ABF-Sub-001536 Rev-41. This QA Inspector performed a review of the documents to determine compliance with the Welding Quality Control Plan (WQCP) submitted by the contractor, compliance with the applicable contract requirements and to determine if any Quality Control (QC) documents were missing. This QA Inspector documented the findings on a weld specific tracking log and informed QA Inspector Bill Levell of the findings. This QA Inspector placed the reviewed documents in the applicable files.

Transportation Engineer Bob Bignano informed this QA that high strength fasteners from LeJeune Bolt Company, Geomet load #10, had arrived by truck at Pier #7 and requested that METS samples be taken. This QA Inspector met with Transportation Engineer Bob Bignano at Pier #7 and randomly selected the applicable samples (bolts, nuts and washers), reviewed the Rotational Capacity (rocap) test report, Mill Test Report (MTR) and finishing Certificate Of Compliance (COC) for each applicable bolt, nut and washer lot/heat. The high strength fasteners were placed in a plastic bag identifying the rocap number, type of bolt, number of samples and this QA Inspectors' applicable lot number for the samples. This QA Inspector and Transportation Engineer Bob Bignano were aware that several pallets containing a rocap for sampling that were to be delivered via another truck had not arrived as of this date. Transportation Engineer Bob Bignano requested the available bolts be sampled today and that when the remaining rocap for Geomet load # 10 arrive then METs would sample it at that time. This QA Inspector sampled the available bolts and completed a Bolt Sample Log (TL-102).

WELDING INSPECTION REPORT

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Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) and Caltrans personnel during this shift. Except as described above there were no notable conversations.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Hager,Craig	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer